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# Archaeologist at Work



## Kinsey





# Archaeologist at Work

## A Story in Pictures

by  
W. Fred Kinsey, III

Photography by  
Karl Rath

Commonwealth of Pennsylvania  
Pennsylvania Historical and Museum Commission  
Harrisburg, 1964

# THE PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

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## INTRODUCTION

Archaeologists, like other people who have unusual occupations, are often asked to explain what they do. Luckily, they usually have good photographs which reveal how they work. These are required as an accurate record of what they have done and what they have found. Also, when the archaeologist lectures about his work, slides can often show clearly certain details that would be very difficult to explain in words alone.

To show the reader, therefore, what does go on at an archaeological "dig," and in the museum laboratory after the digging is finished, the Pennsylvania Historical and Museum Commission has published this album of pictures taken during one of the State Museum's recent expeditions. The photographs were made at the Ibaugh Site, a Susquehannock Indian cemetery, in Washington Boro, Lancaster County.

Here you will find a few of the answers to the question most often asked of the professional archaeologist: "How do you dig?" The pictures and their captions attempt to show, in simple terms, some of the methods used to excavate one particular archaeological site. They also suggest the laboratory work and research which must follow. From this the archaeologist pieces together a record of the past.

Archaeology is not merely the removal of things from the earth. It is the meticulous recording of field work, followed by careful laboratory study and analysis. Before they can be studied, specimens have to be cleaned, catalogued, and repaired. Then a variety of specialists are called upon to lend their skills and knowledge to the problems of understanding and interpreting the pottery, bones, seeds, soils, and other evidence of human activity. A geologist may study geological strata and soil samples to help date the site; a biologist may examine the plant material in order to learn which wild plants were gathered and which plants were cultivated; a mammalogist may study the animal bones to determine what game the Indians preferred and how they killed and butchered; a physical anthropologist may study human skeletal remains to determine size, age, diseases present, and other aspects of human anatomy. Other specialists may be called upon for advice. After all this information is compiled the archaeologist is able to write reports and prepare museum exhibits.

Another question frequently asked of archaeologists, but not easily answered in pictures, deals with the question: "How do you know where to dig?" There are several ways. Sometimes Indian sites are discovered by amateur archaeologists or collectors who search in freshly plowed fields for arrowheads or other traces of human activity. Occasionally sites are found with the help of early maps and historic records. Quite often, important sites are discovered by chance. The Susquehannock Indian cemetery, whose excavation is pictured in this booklet, and which dates from about 1600 to 1620, was discovered as a foundation was being dug for a new house. The site is located on the property of Albert Ibaugh of Washington Boro near Lancaster. Franklin and Marshall College in Lancaster was notified of the discovery. Salvage operations were undertaken by the College in 1955, in cooperation with the Pennsylvania Historical and Museum Commission. The same institutions carried out additional work in April, 1957. Field work for this picture story was done by the Pennsylvania State Museum in the summer of 1958. The laboratory work was carried out later and over a much longer period of time.

A word of caution should be offered. The discovery of a site should be reported to the State Museum, Harrisburg, to a local museum or historical society, to a nearby college, or

Historical Society, The Pennsylvania Archaeologist, P. O. Box 328, Allentown, Pennsylvania. Otherwise, contact information may be difficult to find. Once archaeological information is lost, it is gone for good.

It is noted that many of the workers and assistants to archaeological field techniques, especially in the field, are employed and are given only a few pictures of the job and are not given the training and experience to excavate properly, so as not to miss important information. An inexperienced digger may destroy evidence that can never be replaced. For individuals interested in archaeological field work, the best way to learn is to become a volunteer member of a professional organization conducted by a museum or other institution.

The author wishes to express his thanks to the members of the Pennsylvania Historical and Museum Commission who authorized the publication of this pamphlet, to Dr. S. K. Stevens, Executive Director of the Commission, under whose administration it was prepared, to Karl Path, Commission photographer, to William A. Hunter, Chief of the Division of Research and Publications, and particularly to Harold L. Myers, Assistant Historian, who assisted in its preparation.

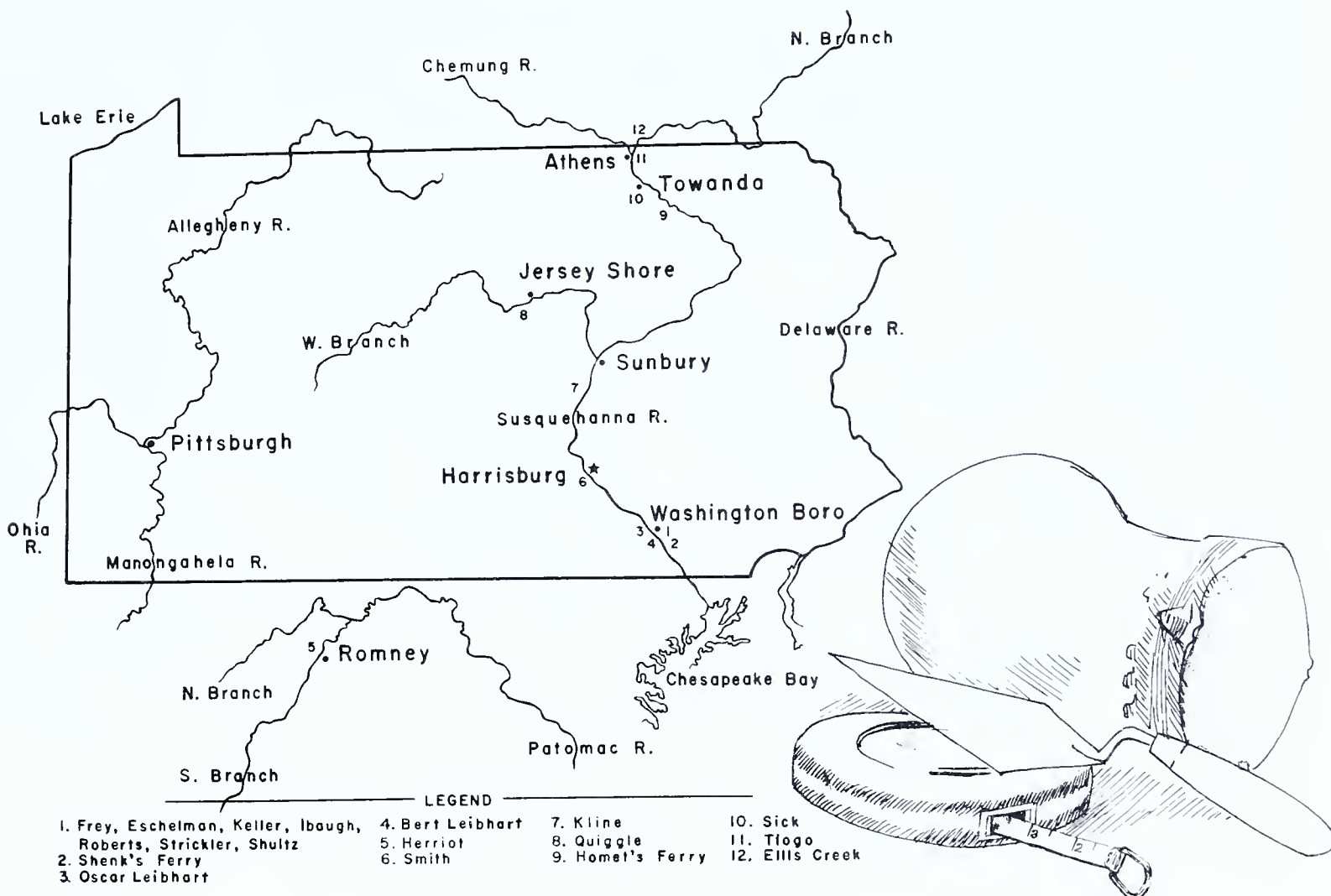
W. Fred Kinsey, III, Director  
North Museum  
Franklin and Marshall College  
Lancaster, Pennsylvania



## Susquehannock Sites

Susquehannock Indians were Iroquois-speaking people who apparently moved into the lower Susquehanna Valley toward the end of the sixteenth century and the beginning of the seventeenth. They were sedentary Indians who lived in large bark-covered houses. Although the Susquehannocks hunted and fished, crops such as corn, beans, and squash were their major food source.

The known sites of Susquehannock towns and villages are located along the Susquehanna River; one other, the Romney site, has been found on the Potomac River in West Virginia. The oldest sites are in the northern part of Pennsylvania while the more recent villages are in Lancaster and York Counties. Dates for the known Susquehannock villages range from about 1575 to 1675.





### The Site

Looking toward the west from a field of tomato plants on the Ibaugh property, one gets a good overall view of the site. Notice that due to a limited working area the excavations were restricted to a very small part of the back yard. The Susquehanna River and York County are seen in the distance.



## Surveying

Before the archaeologist can begin excavating it is necessary to survey and map the portion of the site where he will dig, and to locate this area with reference to a permanent marker or base point. This makes it possible to return to the site in later years for additional investigation. A grid or checkerboard of five- or ten-foot squares is established by driving stakes into the ground at the corners of the squares. Each square of the checkerboard is numbered and excavated as a unit. The surveyor is seen using a plane table and alidade for mapping the site.







### Squares and Levels

Digging is done by levels or layers, each being measured frequently to assure a uniform six-inch depth before the next level is dug. Here a five-foot square marked by wooden stakes is photographed at the twelve-inch level. Squares are photographed while work is in progress. A signboard is used to identify the site, the square, the date, and the depth of the level. Work is done almost exclusively with a shovel and a trowel. Finer tools are used for very delicate work such as the excavation of fragile specimens or skeletons.





### Five-foot Squares

Because of the field of tomato plants, the house foundation, and a driveway, the excavation had to be confined to a small portion of the backyard. To keep four field workers busy we worked simultaneously in four adjacent five-foot squares. Narrow earth walls were maintained to prevent interference with the work in the next square. Later the walls were removed.





## A Refuse Pit

Places where the Indian left his trash or garbage are extremely important to the archaeologist. In these middens, as the archaeologist prefers to call them, are found the remains of items which the Indian used, but eventually lost or discarded. Middens yield pieces of household pottery, animal bones, stone and bone tool fragments, and burned scraps of food. Plant remains and wooden tools are scarce because they decay rapidly. By piecing together and studying these humble items it is possible to learn about Indian life hundreds and even thousands of years ago.

Here the archaeologist has encountered a midden and is carefully clearing away the earth. Bones, pieces of pottery, and fragments of rock can be seen.







### Visitors

Archaeological field work never fails to attract onlookers. A constant supply of "sidewalk superintendents" offers good advice and bad. Albert Ibaugh, the owner of the property, is on the extreme right.



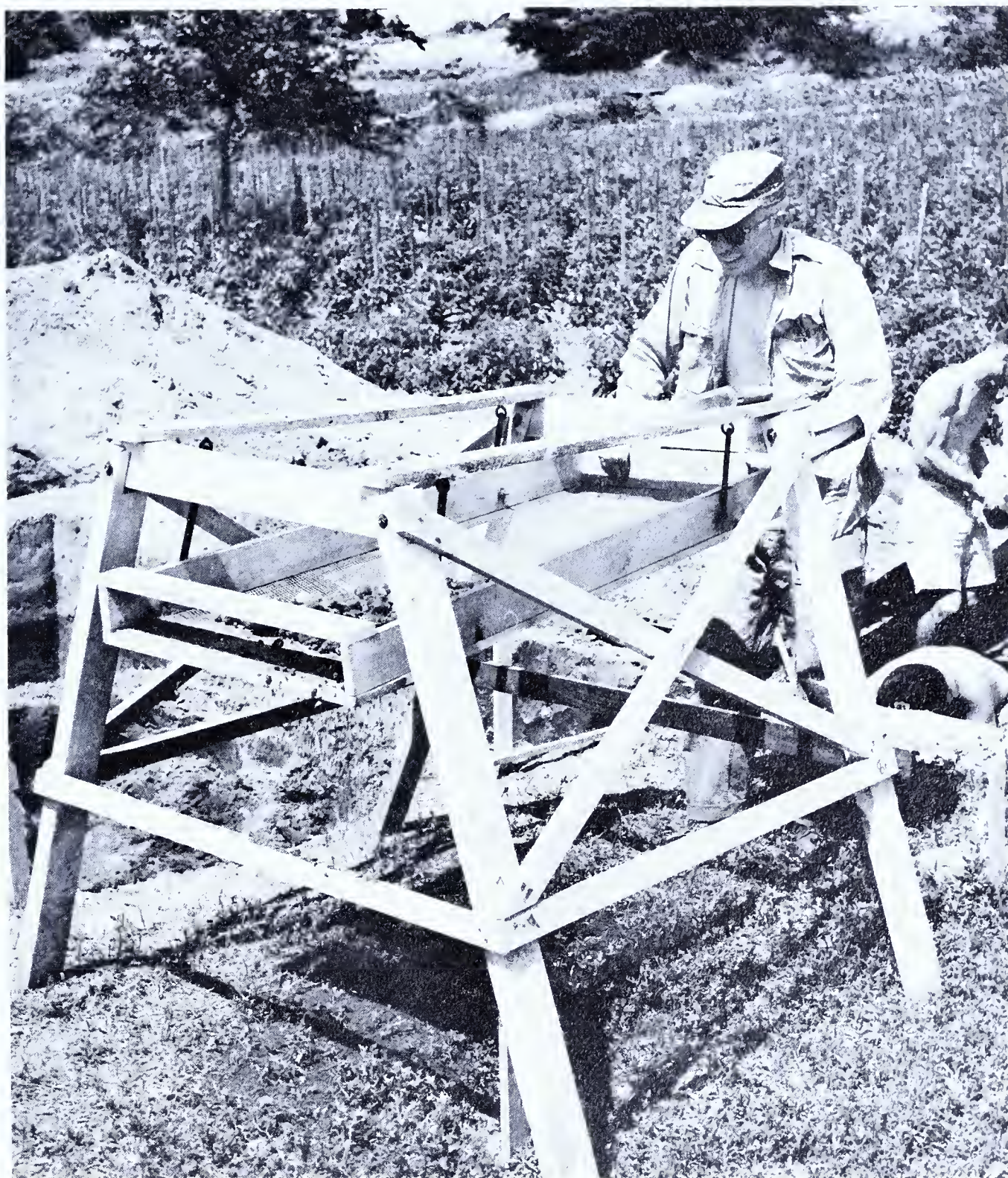
### The Refuse Pit Fully Exposed

After the archaeologists encountered the midden, the excavation was expanded in order to study the entire area as a complete unit or feature. More pottery, bones, and pieces of chipped stone were found throughout the refuse. The dark soil toward the center, containing scattered remains, shows where Indians dug into the sub-soil and deposited their trash. The stained soil contained the debris of the Shenk's Ferry Indians who lived at the site several generations before the Susquehannocks. This was not immediately recognized while excavations were in the early stages. Further digging and laboratory work made it clear. The other dark area, at the bottom of the picture, indicates the location of a Susquehannock burial. It is necessary that the archaeologist be able to see these differences in soil color and to understand their meaning.



### An Earth Sifting Machine

Soil from graves and from middens is placed on this screen. The screen is shaken so that the dirt falls through leaving the Indian refuse on the screen. All but the very tiny items were collected in this manner.







### Screening with Water

When the numerous small blue and white glass European beads were discovered in a grave, the surrounding earth was washed through window screen mesh. This slow but effective procedure of carrying buckets of earth to the nearest abundant water supply, the Susquehanna River, enabled us to collect beads of about pinhead size. These beads had fallen through the larger screen.



## Stringing Beads

It is very important that unearthed materials be handled with care. Here a daughter of one of the field workers is stringing and tagging glass beads according to the burial in which they were found. Pennsylvania Indians had no metal or glass objects before the arrival of the European. Rifles, kettles, axes, knives, trinkets, and glass beads were traded to the Indian in exchange for beaver skins and other furs. By comparing the European trade materials, especially the glass beads, with others from an Indian village of a known date, it is possible to date sites of unknown age. It is by this method that the dates of 1600 to 1620 are assigned to the Ibaugh Site.





## Clearing Burial Two

After the dark stain of a burial has been located against the background of the surrounding lighter sub-soil, it is necessary to record its position. It is then a long and tedious process to clear away the earth fill surrounding the skeleton and the objects that were frequently placed in the grave. When this is finished the burial is photographed, measured, drawn, and completely described in the archaeologist's field notebook.



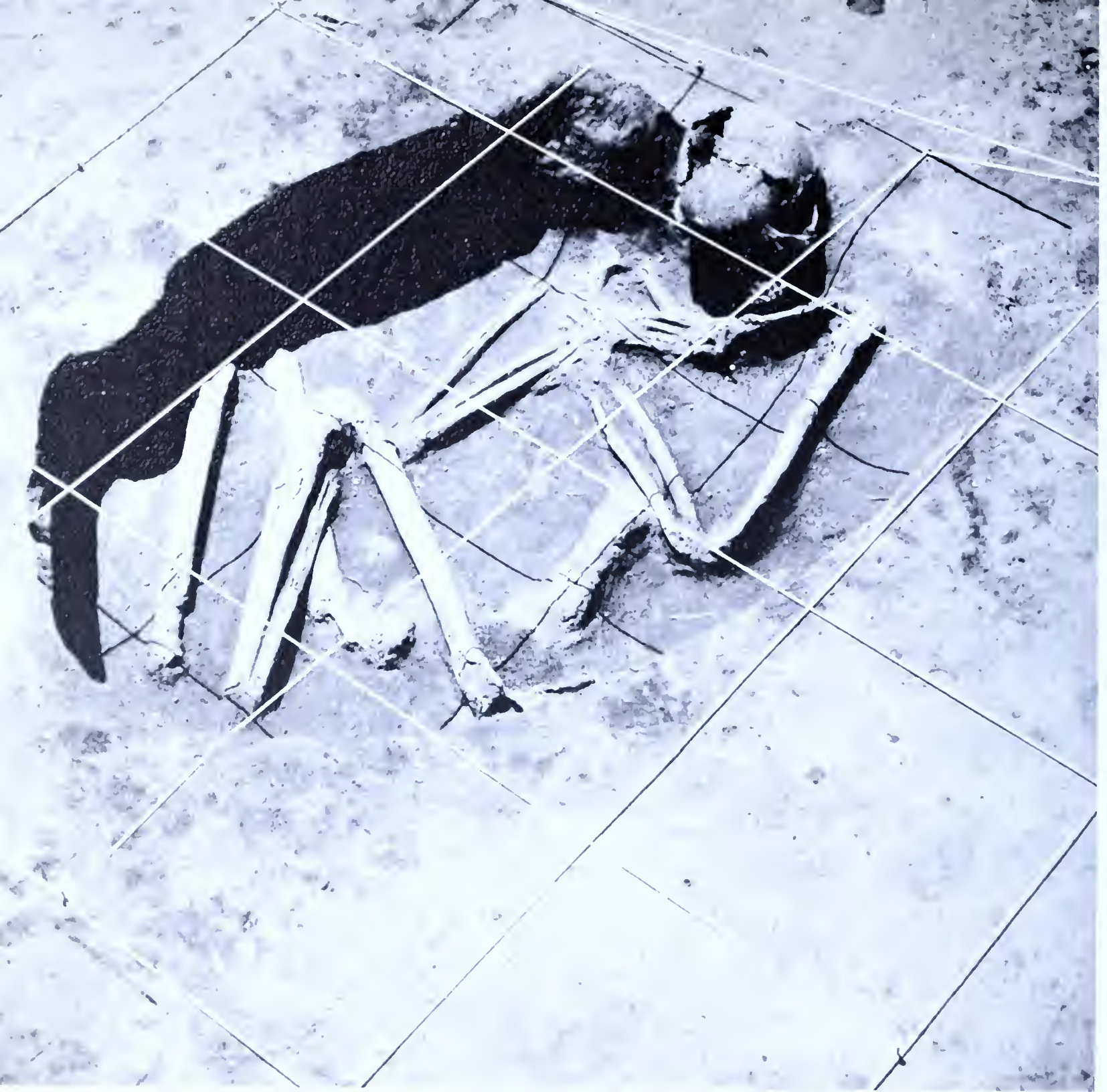




### Preparing a Grid

It was found that the most accurate way to sketch the skeleton and plot the positions of the limbs and grave offerings was by superimposing a grid system over the burial. Nails were placed at twelve-inch intervals and mason's twine was stretched between the nails. Notice that the field workers have removed their shoes so as not to mar the smooth earth floor adjacent to the burial.





### The Grid

The burial is cleared and the grid is finished. The archaeologist makes notes and drawings and photographs before the skeletal remains are removed. Each square of this grid is twelve inches on a side. No man-made objects were found in this burial. The skeletal material was rather badly decayed and it was, therefore, of little use to the physical anthropologist for detailed study.



## Moistening the Earth

When ground has been exposed to the sun for a long time it dries and bleaches white. This makes it difficult or impossible for the archaeologist to see the differences in soil color that indicate the presence of Indian burials, pits, or other features. To bring out these important differences the ground was lightly dampened with a fine garden spray.





## Photography

Here the photographer is getting a close-up picture of burial two. A sign-board tells the site, the place, the date, the number of the square, and the number of the burial.







### **Burial Two, Close View**

Burial two contains the remains of an adult male, probably between the ages of twenty-eight and thirty-five. The holes in the skull do not indicate a violent death. These portions of the cranium collapsed as a result of their decayed condition. The faintest touch in certain places may cause damage to the skeleton. This individual apparently died a natural death.





Lunch Time



### **A Sun Shelter**

To protect the archaeologists from the direct rays of an extremely hot July sun, a hasty shelter was erected from scrap lumber and an old tarpaulin. Although it wasn't very attractive it served its purpose.



### Burial Five

A clay pottery vessel, numerous triangular arrow points of quartz, an iron axe, and a celt-like chisel can be seen in this burial. Often clay pots contain small bone fragments which are presumed to be the remains of a symbolic last meal for the deceased. This burial held an adult male who died when he was between thirty and forty years of age. The physical anthropologist is able to approximate the age of the skeleton by certain features of bone growth.







### Burial Four

Susquehannock Indians of this period were buried in what the archaeologist calls a flexed position. This means that the legs were doubled or pushed up toward the chest. The amount of flexure varies; some skeletons are found with the leg bones tightly pressed against the chest while others are flexed only below the knees. This flexed position is typical of Susquehannock mortuary practice. The reasons for this type of burial are not certain. A few fully extended burials have been found at the Ibaugh Site but these are the dead of the Shenk's Ferry people—the same people responsible for the older middens at the site. Burial four held the remains of a youth between the ages of sixteen and twenty.





### Burial One

Buried with this adolescent, who was between sixteen and twenty, were many glass beads, three clay pots (one vessel is inside another), and two steel knife blades. The pots are broken by the pressure of the earth pressing upon the thin walls of the vessels. Thirteen burials, one of which was a double burial, were uncovered as a result of this particular field session.





### The Work Table

With the completion of the field work the excavated materials are transported to the museum laboratory. They must now be unpacked, sorted, cleaned, catalogued, repaired, studied, and analyzed. Specimens are placed in small cardboard boxes with identifying tags while the work is in progress. The archaeologist refers frequently to his field notes and to the photographic record to maintain a close check on this work.





### Cleaning

Specimens taken to the laboratory from the field still have dirt on them. In the laboratory they are washed and cleaned with a tooth brush before they are catalogued, described, and analyzed.





### Cataloguing

Placing a permanent identifying mark on each specimen is part of the laboratory work. This is done so that there is no possibility of important data being lost. The recently unearthed materials are now part of the museum's collections and are available for study and exhibition.





### Pottery Restoration

Two pieces of pottery from a vessel found in Burial two are fitted together. These fragments, or sherds as they are called, are held in position until the glue sets. Sometimes when pieces are missing, plaster is used to fill the void. This gives the repaired vessel additional strength. Pottery is restored to show its original size, shape, and appearance, and to facilitate study and exhibition. It is not necessary, however, to restore all vessels to their original form since it is possible to study the fragments.





### **Exhibit of a Susquehannock Burial**

At the North Museum of Franklin and Marshall College in Lancaster, a young visitor seems spellbound by an exhibit of an Indian burial. This permanent exhibit is one of the many results of the field work conducted at the Ibaugh Site in Washington Boro over the past years. Similar displays have been placed in the Pennsylvania State Museum and the Historical Society of York County. Written accounts of the field work have already been published by the Pennsylvania Historical and Museum Commission and the Society for Pennsylvania Archaeology.



### ADDITIONAL READINGS

For those desiring information on the Susquehannock Indian the *Susquehannock Miscellany* (Pennsylvania Historical and Museum Commission, 1959), John Witthoft and W. Fred Kinsey, III, editors, is the latest work. John Witthoft, *The American Indian as Hunter* (Pennsylvania Historical and Museum Commission reprint, 1953), is a short general work on prehistoric Indians. *Indians in Pennsylvania* (Pennsylvania Historical and Museum Commission, 1961) by Paul A. W. Wallace concerns Indians of a later period, particularly as the European settlers knew them.

The best pictorial work on North American Indians is *A Pictorial History of the American Indian* (Crown Publishers, New York, 1956) by Oliver La Farge. For younger readers the same author has prepared *The American Indian* (Golden Press, New York, 1956). Another work for young readers is *Archaeology in the Americas* by Mary Elting and Franklin Folsom (Harvey House, Irving on-the-Hudson, New York, 1960).

More advanced books on technique include: Robert Heizer, *A Guide to Archaeological Field Methods* (Palo Alto, California, 3rd revised edition, 1958); Kathleen M. Kenyon, *Beginning in Archaeology* (Praeger, New York, 1953); and Mortimer Wheeler, *Archaeology from the Earth* (Penguin, Baltimore, 1954).

Other good publications on archaeology are available in the Penguin paperback series.

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